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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/761,865	01/17/2001	Hiroshi Kyusojin	09792909-4886	5798

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EXAMINER	
TON, ANTHONY T	
ART UNIT	**PAPER NUMBER**
2661	7

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/761,865	KYUSOJIN ET AL.	
	Examiner	Art Unit	
	Anthony T Ton	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 January 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 January 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. According to the disclosures of the Background of the Invention section of the specification from page 1 line 6 to page 5 line 9, **Figure 1** through **Figure 7** should be designated by a legend such as --**Prior Art**-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

a) Expression "**t(tn**" in page 2 line 13 and in page 11 line 6 is a typo.

Examiner suggests changing this expression to "**t < tn**".

b) Term "**the network 1**" in page 18 line 2 cannot be found **in Fig.18**.

Examiner suggests changing term "**NETWORK**" in Fig.18 to "**NETWORK 1**".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the **first paragraph** of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. **Claims 10 and 11** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not

described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In Claim 10, the claimed subject matters of "wherein based on **a label attached to a packet at the transmission side**, at the network intermediate node, the flow having the resource reservation made therefor is distinguished from other flows, and set in a corresponding relation with a queue" are not adequately disclosed in the specification. Particularly, there is no any specific disclosure in the specification related to **a label attached to a packet at the transmission side.**

5. The following is a quotation of the **second paragraph** of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

6. **Claims 9 and 10** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites the limitation "**and set in a corresponding relation with a queue**" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. **Claims 1-5** are rejected under 35 U.S.C. 102(e) as being anticipated by **Delp et al.** (US Patent No. **6,477,168**).

a) **In Regarding to Claim 1**: **Delp et al. disclosed** a packet transmitting method comprising the steps of:

controlling a timing of packet transmission in a transmission terminal on a packet network *(see Fig.1: block Cell/Frame Scheduler 102 at Outbound Queuing and Shaping 114; and see Fig.11: block 1125; this block is used to calculate next target transmission time of a next packet (hence controlling a timing of packet transmission))*; and

controlling the amount of data to be transmitted per unit time from the transmission terminal to the network *(see Fig.12: L1 (long data packet) and L2 (short data packet); and see col.9 lines 54-65)*; .

b) **In Regarding to Claim 2**: **Delp et al. further disclosed** wherein the amount of data to be transmitted to the network per unit time is dynamically changed *(see Fig.12: In this Figure shows Link Speed has been operated in different rates at different times. Hence, Delp et al. inherently disclosed the amount of data to be transmitted to the network per unit time is dynamically changed because the transmission rate is changed in different times; therefore, the amount of a transmitted data would be changed thereby)*

c) **In Regarding to Claim 3**: **Delp et al. further disclosed** wherein a packet is transmitted at an interval according to a packet size *(see Fig.12: Packet L1 size and packet L2 size are transmitted from side 1204 to side 1206 by the link 1202).*

d) **In Regarding to Claim 4**: **Delp et al. further disclosed** wherein a packet is transmitted at an interval according to a packet size *(see the described in the claim 3 above)*, and the amount of data to be transmitted to the network per unit time is dynamically changed *(see the described in the claim 2 above)*.

e) **In Regarding to Claim 5**: The claimed limitations disclosed in the claim 5 are the same as that in the Claim 1. Therefore, the rejections in the claim 1 would apply to claim 14 in an apparatus as taught.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skilled in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. **Claims 6-8** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Delp et al.** (US Patent No. **6,477,168**) in view of **Regache** (US Patent No. **5,579,312**).

a) **In Regarding to Claim 6**: **Delp et al. disclosed** a packet transmitting method comprising the steps of:

independently controlling a packet order and a packet flow rate in a transmission terminal on a packet network *(see Fig.1: scheduler 102, shaping 110 and shaping 114 (hence independently controlling a packet flow rate); and col.4 lines 1-4: FIFO (hence scheduler 102 and FIFO buffer controlling a packet order))*.

Delp et al. failed to explicitly disclose carrying out bandwidth guaranteeing for a plurality of flows.

Regache disclosed a method and an apparatus for scheduling the transmission of cells of guaranteed-bandwidth virtual channels carrying out bandwidth guaranteeing for a plurality of flows *(see Fig.2 and see the detailed description for the Fig.2)*.

Therefore, it would have been obvious to one of ordinary skilled in the art can employ such carrying out bandwidth guaranteeing for a plurality of flows throughout the cell/frame scheduler of Delp et al, as taught by Regache, in order to schedule the transmission of cells of guaranteed-bandwidth virtual channels, **the motivation being** to make the cell/frame scheduler of Delp et al more reliable.

b) **In Regarding to Claim 7**: **Delp et al. disclosed** a packet transmission apparatus for transmitting a plurality of flows onto a packet network by carrying out bandwidth guaranteeing, comprising:

scheduling means for controlling an order of packets *(see Fig.2 block scheduler 102)*; and

shaping means for controlling a flow rate of packets *(see Fig.1 blocks shaping 110 and shaping 114)*,

Delp et al. failed to explicitly disclose wherein bandwidth guaranteeing is carried out for the plurality of flows by independently controlling a packet order and a packet flow rate.

Regache disclosed a method and an apparatus for scheduling the transmission of cells of guaranteed-bandwidth virtual channels wherein bandwidth guaranteeing is carried out for the

plurality of flows by independently controlling a packet order and a packet flow rate *(see Fig.2 and see the detailed description for the Fig.2).*

Therefore, it would have been obvious to one of ordinary skilled in the art can employ such wherein bandwidth guaranteeing is carried out for the plurality of flows by independently controlling a packet order and a packet flow rate throughout the cell/frame scheduler of Delp et al, as taught by Regache, in order to schedule the transmission of cells of guaranteed-bandwidth virtual channels, **the motivation being** to make the cell/frame scheduler of Delp et al more reliable.

c) **In Regarding to Claim 8**: **Delp et al** and **Regache** disclosed all aspects of this claim as set forth in claim 7.

Both **Delp et al** and **Regache failed to explicitly disclose** a shaping means controls the flow rate of packets by hardware. However, **Delp et al. disclosed** a communications scheduler of the present invention is preferably implemented using an appropriate scheduling program recorded on a machine-readable medium and executing on a programmable processor, *but could alternatively be implemented entirely as hardware registers and logic, or as some combination of hardware and a programmable processor (see col.9 line 66 – col.10 line 5).*

Therefore, it would have been obvious to one of ordinary skilled in the art can employ such a shaping means controls the flow rate of packets by hardware throughout the cell/frame scheduler 102 and shaping 114 as shown in Fig.1 of Delp et al, as taught by the applicant, in order to control the flow rates of cells in different virtual channels in a communication network more accurately, **the motivation being** to make the cell/frame scheduler and shaping apparatus of Delp et al more reliable.

11. **Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Bonomi et al.** (US Patent No. **6,011,775**) in view of **Delp et al.** (US Patent No. **6,477,168**).

Bonomi et al. disclosed a bandwidth guaranteeing method comprising the steps of:

transferring data based on a single queue at a network intermediate node *(see Fig.1)*; and

guaranteeing packet transmission within a bandwidth specified for a flow, resource reservation having been made therefor, on a packet network, and limiting packet transmission in a bandwidth exceeding the specified bandwidth *(see Figs.1 and 3-4; and see col.11 line 2 – col.12 line 56)*.

Bonomi et al. failed to explicitly disclose managing a state of resource utilization by a flow unit at a transmission side.

Delp et al. disclosed managing a state of resource utilization by a flow unit at a transmission side *(see Fig.1 block cell/frame scheduler 102 at outbound queue and shaping 110 that connected to network interconnect 108 (hence transmission side); and see Fig.11)*.

Therefore, it would have been obvious to one of ordinary skilled in the art can employ such managing a state of resource utilization by a flow unit at a transmission side throughout the scalable shaping as shown in Fig.1 of Bonomi et al, as taught by Delp et al., in order to control the flow rates of packets at a flow unit at a transmission side in a communication network more effectively, **the motivation being** to control information packets at a transmission unit more effectively.

12. **Claims 9 and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bonomi et al.** (US Patent No. **6,011,775**) in view of **Delp et al.** (US Patent No. **6,477,168**) as applied to claim 9 above, and further in view of **Dail et al** (US Patent No. **5,570,355**).

Bonomi et al. and **Delp et al. disclosed** all aspects of these claims as set forth in claim 9.

Both Bonomi et al. and **Delp et al. failed to disclose** the following subject matters:

wherein based on a label attached to a packet at the transmission side at the network intermediate node, the flow having the resource reservation made therefor is distinguished from other flows, and set in a corresponding relation with a queue as recited **in Claim 10**; and

wherein at the network intermediate node data transfer is carried out based on a queue corresponding to the flow having the resource reservation made therefor and queues corresponding to the other flows as recited **in Claim 11**.

Dail et al disclosed such subject matters *(see Fig.11: Node Bandwidth Controller 435 (intermediate node), block 1114 ATM/Contention Slots (resource reservation) (each ATM cell having VPI and VCI hence Label), 1101-1 to 1101-n and 1102-1 to 1102-m (Queues corresponding to the other flows)).*

Therefore, it would have been obvious to one of ordinary skilled in the art can employ such subject matters throughout the scalable shaping as shown in Fig.1 of Bonomi et al, as taught by Dail et al , in order to control the flow rates of packets at a flow unit at a transmission side in a communication network more effectively, **the motivation being** to make Bonomi et al more efficient.

Examiner Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony T Ton whose telephone number is 703-305-8956. The examiner can normally be reached on M-F: 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W Olms can be reached on 703-305-4703. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ATT
5/26/2004

Primary Ex.
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